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10/825,630	04/16/2004	Francois Baccelli	017346-0181	7864

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FOLEY AND LARDNER LLP
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EXAMINER

MANOHARAN, MUTHUSWAMY GANAPATHY

ART UNIT	PAPER NUMBER
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2617

MAIL DATE	DELIVERY MODE
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12/31/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/825,630

Applicant(s)

BACCELLI ET AL.

Examiner

Muthuswamy G. Manoharan

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 10/03/2007 have been fully considered but they are not persuasive.

Examiner respectfully disagrees with applicant's assertion on pages 9-10 with the remarks, "Claim 1 recites a control device Thus, unlike the claimed invention, according to the centralized approach taught in Rune, each base station cannot be processed independently of the others".

Claim 1, further recites, "an evaluation of load condition associated to said base station, as a function of the loads calculated for the mobiles served by said base station and candidates to said base station as a function of the base station. Therefore it is clear that applicant's load calculation is based on not just the mobiles of the serving base station but also on the mobiles from the candidate base stations from the candidate set.

The uplink load of the applicant depends on not just the mobiles from the serving base station but also from the other mobiles served by the candidate base stations. Also, it is not possible to isolate interference measurements of the current base station from the mobiles from the candidate base stations.

It is further evident from the claim 21, the summation is over the base station and therefore, the load depends on all the mobiles of the network. Equation 9 of Rune is

exactly the same as the equation given in claim 21. Therefore, the load calculations of Rune are not different from that of the applicant's.

Applicant further argues that, "Thus unlike the claimed invention, according to the centralized approach taught in Rune, each base station cannot be processed independently of the others". First of all, this underlined limitation is not part of the claim. Further, since the load calculation involves not just the mobiles of the serving base station but also on the mobiles from the candidate base stations from the candidate set. Therefore, Rune's teaching is not different from the applicant's.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7, 11-17 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Rune et al. (US 2004/0209624).

Regarding **claim 1**, Rune teaches a control device for a wireless communications network, said network comprising a plurality of base stations communicating with a plurality of mobiles, said control device comprising a calculator of quantities belonging to a group of quantities comprising, quantities related to attenuations measured

between mobiles and base stations (Paragraph [0026]), and quantities related to a signal to interference and noise ratio threshold ("target CTIR", Paragraph [0029]), said control device further comprising (Figure 1, abstract; Paragraph [0023]):

a decision device operating jointly with the calculator according to a predefined mechanism, for deciding whether or not a new candidate mobile can be processed in said network ("**if the threshold is exceeded, new connections may not be processed**", Paragraph [0045]; "**admission control**", title)

characterized in that the said predefined mechanism comprises, for each base station to be controlled by said control device (Figure 1; **RNC1 controls the base stations BS1 and BS2**; Paragraph [0020]);

for each mobile device served by the said base station and for each new candidate mobile to aid base station ("**contributions of those mobiles to the total uplink interference**", Paragraph [0008]; **Note: those mobiles include the candidate mobiles also**), a load calculation function capable of calculating the load induced by said mobile to said base station, a sole function of the quantities output by said calculator ("**uplink load estimation**", Paragraph [0008-0009]),

an evaluation of a load condition, associated to said base station, as a function of the loads calculated for the mobiles served by said base station and candidates to said base station, said load condition representing the feasibility of the power allocation to said mobiles by the said base station (Paragraphs [0008-0009]; **Note: Rune's load estimation includes interference from other cell also and therefore includes candidate mobiles**).

Regarding **claim 2**, Rune teaches the device according to Claim 1, characterized in that load condition is obtained by summing the loads calculated for the mobiles served by a station and candidates to said base station (Paragraph [0034]; **Note: Rune's load estimation includes load contributions of all mobiles for which it is the serving RNC to all cells controlled by another RNC (Abstract) and therefore includes candidate mobiles).**

Regarding **claim 3**, Rune teaches the device according to Claim 1, characterized in that the load calculation function comprises, for a mobile, the summing of the inverses of the attenuations of the adjacent stations, the result being multiplied by an expression related to the threshold of the signal to interference and noise ratio, and, by the attenuation at the server station (Paragraph [0038]).

Regarding **claim 4**, Rune teaches the device according to Claim 1, characterized in that it comprises storage of a current value of the summed load, and in that the said mechanism operates incrementally by calculating the load of a candidate mobile, and updating the summed load, in order to determine whether the mobile is admitted or not, by comparing the summed load with a threshold (Paragraph [0045]).

Regarding **claim 5**, Rune teaches the device according to Claim 1, characterized in that the calculator is provided with a function capable of evaluating a prior uplink budget condition (UBC), compared with a threshold budget value (UBC), and in that the mechanism used by the decision device first of all invokes the said function of evaluation of the prior condition, and rejects the candidate mobile if this condition is not satisfied (Paragraph [0045]).

Regarding **claim 6**, Rune teaches the device according to Claim 5, characterized in that the prior condition comprises, for a mobile, the calculation of its maximum power, divided by an expression related to the threshold of the signal to interference and noise ratio, and by the attenuation at the server station ("perfect power control is assumed so that actual CIR equals the target", Paragraph [0030]).

Regarding **claim 7**, Rune further teaches the device according to Claim 5, characterized in that the working condition comprises a threshold value, established in correspondence with the said threshold budget value (UBC) (paragraph [0045]).

Claims 11-17 are rejected for the same reason as set forth in claims 1-7.

Regarding **claim 21**, Rune teaches the device according to claim 2, characterized in that said load is given by

$$\sum_{m_u} \left(\sum_v \frac{1}{L_{m_u,v}} \right) \overline{\xi}_{m_u}' L_{m_u,v}, \text{ where}$$

m_u is a mobile served by the base station

$L_{m_u,v}$ relates to the attenuation between mobile m_u and the base station v

$$\overline{\xi}_{m_u}' = \frac{\overline{\xi}_{m_u}}{1 + \overline{\xi}_{m_u}} \text{ with } \overline{\xi}_{m_u} \text{ the signal to interface and noise ratio threshold for mobile } m_u$$

and in that the power allocation to said mobiles by said base station is feasible if said load condition is below a predetermined threshold (Paragraph [0027,0038,0045] and equations 9,2 and the equation in Paragraph [0029]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-10 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rune (US 2004/0209624) and in view of Jain et al. (hereinafter Jain) (US 2002/0193118).

Regarding **claim 8**, Rune teaches all the particulars of the claim except device according to Claim 1, characterized in that it comprises a second mechanism capable of cooperating with the calculator in order to evaluate, for a given station, a non-congestion criterion, and a second decision device, capable of modifying the mobile rates in order to remain within the field of the congestion criterion. However, Jain teaches in an analogous art, device according to Claim 1, characterized in that it comprises a second mechanism capable of cooperating with the calculator in order to evaluate, for a given station, a non-congestion criterion, and a second decision device, capable of modifying a mobile bit rate in order to remain within the field of the congestion criterion (Abstract, lines 1-8). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the device according to Claim 1, characterized in that it comprises a second mechanism capable of cooperating with the

calculator in order to evaluate, for a given station, a non-congestion criterion, and a second decision device, capable of modifying the mobile rates in order to remain within the field of the congestion criterion. This modification increases the efficiency of a wireless system and reduces the probability of overloading or a fault.

Regarding **claim 9**, Rune further teaches, the load calculation function with these values (Paragraph [0035], lines 1-4), and then the calculation of the summed load due to the mobiles served by the station in question, this summed load being compared with a threshold (Paragraph [0038], lines 1-5; Paragraph [0045], lines 4-7).

Regarding **claim 10**, Rune further teaches device according to claim 8, characterized in that the second mechanism comprises, for each mobile, a calculation of its signal to interference and noise ratio threshold, and then the calculation of an expression related to this signal to interference and noise threshold, and next: the invocation of the function capable of evaluating the prior uplink budget condition (UBC), compared with a threshold budget value (UBC), the mobile concerned being rejected if this prior condition is not satisfied, for the mobiles not rejected, the invocation of the load calculation function with the aforementioned values, and then the calculation of the summed load due to the mobiles served by a station in question, this summed load being compared with a threshold related to the threshold budget (Paragraphs [0027-0036]; Paragraph [0045]).

Claims 18-20 are rejected for the same reason as set forth in claims 8-10.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

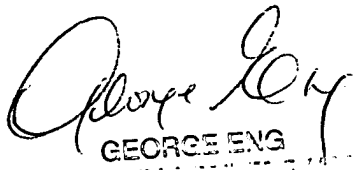
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Muthuswamy G. Manoharan whose telephone number is 571-272-5515. The examiner can normally be reached on 7:00AM-2:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eng George can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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GEORGE ENG
SUPERVISORY PATENT EXAMINER